

J. R. Simplot  
Company  
  
Bio-Fuels



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J.R. Simplot

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# International Agribusiness Company

~13,0000  
Employees



Food Group

French fry plants



USA  
Canada  
Australia  
Chile  
China



# Vegetables

USA

Mexico



# French fry plants US

- ★ Grand Forks, ND
- ★ Aberdeen, ID
- ★ Heyburn, ID
- ★ Nampa, ID
- ★ Caldwell, ID
- ★ Hermiston, OR
- ★ Othello, WA
- ★ Moses Lake, WA



# By-products

- ✳ Peeweess & culls
- ✳ Peel
- ✳ Wet waste
- ✳ Package line waste
- ✳ Primary cake
- ✳ Oil: daft & rendered
- ✳ Warehouse waste
- ✳ Starch



# Bio-Fuels

- ✦ Ethanol
- ✦ Bio-diesel



# Ethanol

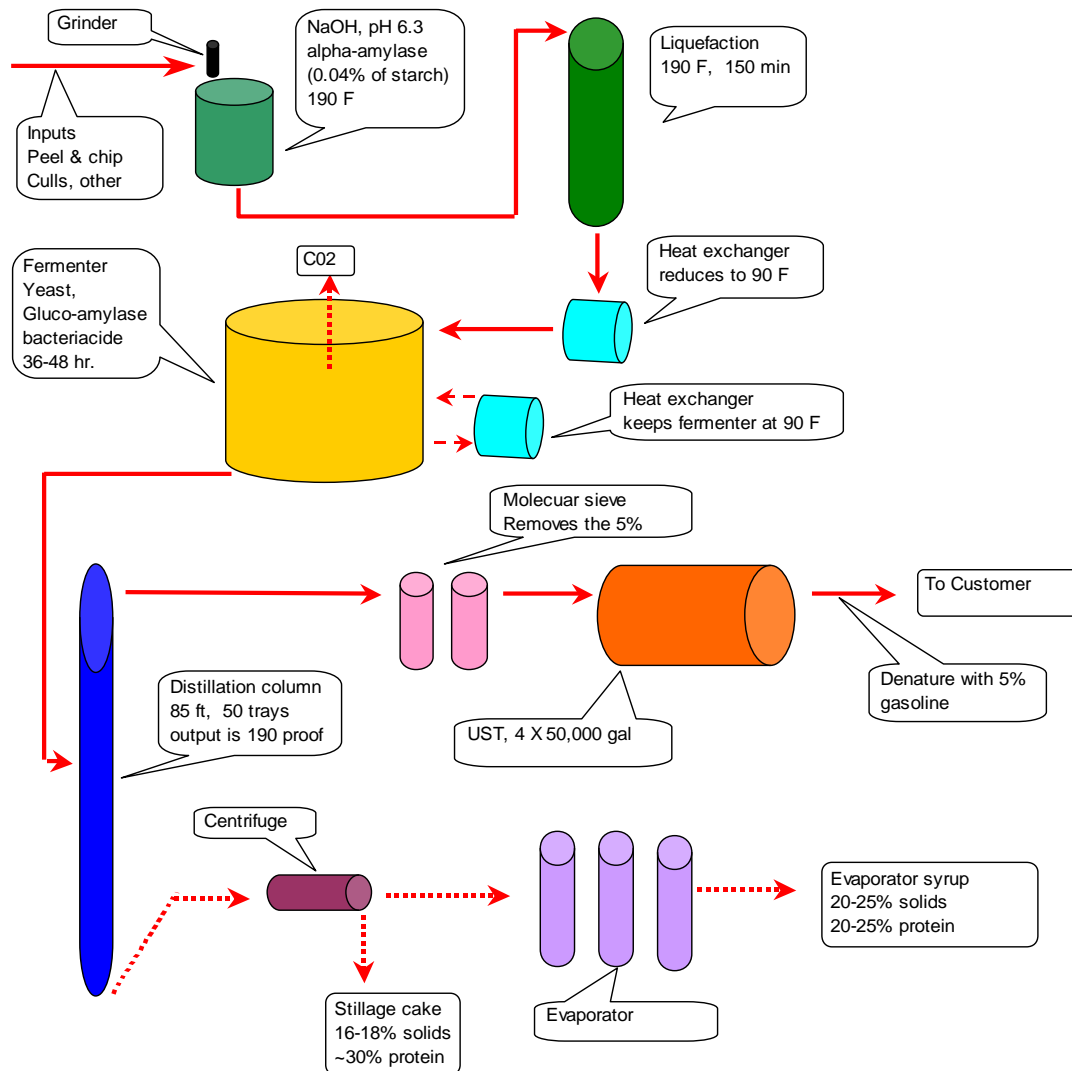
- ✳ Plant design
- ✳ Process
- ✳ By-products
- ✳ Opportunity feed stocks
- ✳ Issues



# Ethanol Process



## Schematic Diagram of J.R. Simplot Ethanol Process



# Ethanol by-products

- ✦ Stillage cake
- ✦ Evaporator syrup



# Opportunity Feed stocks

- ✳ Tapioca
- ✳ Primary cake
- ✳ Potato starch
- ✳ Corn Syrup
- ✳ Sugar beets
- ✳ Sugar
- ✳ Corn



# Issues

- ✦ High water content in feed stocks
- ✦ Bacterial contamination
- ✦ Heat exchangers
- ✦ Shared heat exchangers
- ✦ No rails
- ✦ Out of phase with market



# Bio-diesel

Collaboration  
With  
U of I  
&  
Albertsons



# Collaboration

- ★ Diesel pickups
- ★ Durability tests, 1000 hr.
- ★ Injector coking tests
- ★ 18-wheeler demonstration
- ★ Used oil/ diesel blends



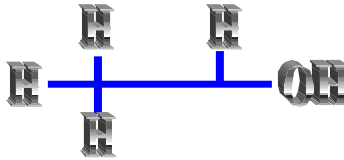
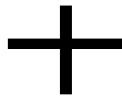
# Bio-diesel Chemistry



# Bio-diesel Chemistry

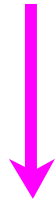


Triglyceride



Ethanol

Catalyst



# Bio-diesel chemistry

